MONO COUNTY TRI-VALLEY GROUNDWATER MANAGEMENT DISTRICT

123B Valley Road
Chalfant, California 93514

BOARD OF DIRECTORS:
Greg Allen, Chairperson
Don Moss, Vice-Chairperson
Geri Bassett, Secretary
Carol Ann Mitchell
Ed Parkinson
Josh Rhodes
Matt Doonan

Rhonda Duggan, Mono County District 2 Supervisor (Ex-Officio Member)

SPECIAL MEETING AGENDA

Wednesday, March 26, 2025 at 6:30 p.m.
Chalfant Community Center
Chalfant, CA 93514

Mission: The mission of the Tri-Valley Groundwater Management District is to comply with the California Sustainable Groundwater Management Act (SGMA) of 2014 and other applicable laws (government code, water code etc.) as the law pertains to the District. Core Vision: To preserve the groundwater within the boundaries of the District (Chapter 844 of 1989 California Statutes).*

1. **Advisory Board.**
   A. Report.

2. **Public Comment.**

3. **Update on the Mono County Tri-Valley Groundwater Model Project.**

4. **Adjournment to Wednesday, June 4, 2025, 6:30 p.m. at the Benton Community Center.**

TVGMD Board of Directors Meeting

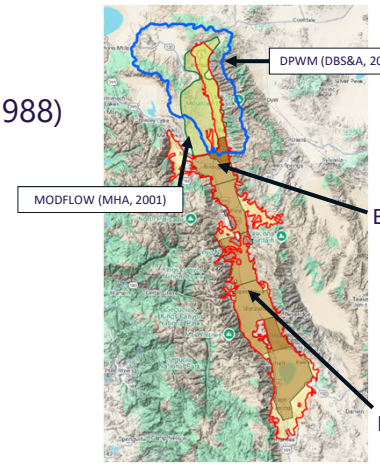
March 26, 2025

Presentation Overview

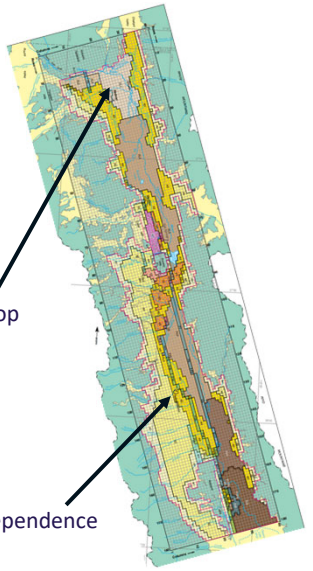
1) Previous Studies and Models
2) Data Summary
   i. Well Logs
   ii. Water Levels
   iii. Other Datasets
3) Proposed Groundwater Model Approach

Previous Studies and Models

1. **PWA (1980)**
2. PWA (1983)
3. Kennedy Jenks Chilton (1987/1988)
4. Jackson(1993)
5. **MHA (2001)**
6. TEAM (2006)
7. **DBS&A (2021)**
8. OVGA (2021)



Non-USGS Model Domains



USGS Model (Danskin, 1998)

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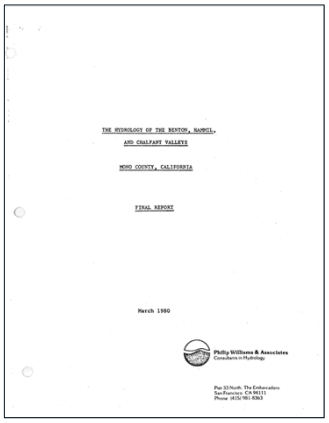
www.dbstephens.com

Previous Studies and Models

1. PWA (1980). The Hydrology of the Benton, Hammil, and Chalfant Valleys. *[partially incomplete document]*

– Mentions water table declines for 15 years (~1965).
– Water table declines of 4 to 8 ft in Chalfant attributed to LADWP pumping from Laws well field.
– Predicts water table declines will accelerate if irrigated agricultural acreage exceeds 3,100 acres
  • Current irrigation: ~3,770 acres (~22% increase)


THE HYDROLOGY OF THE BENTON, HAMMIL, AND CHALFANT VALLEYS

MONO COUNTY, CALIFORNIA

FINAL REPORT

March 1980

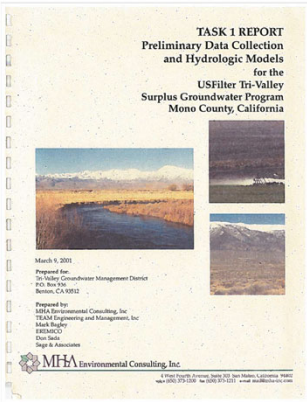
Philip Williams & Associates Consultants in Hydrology

DBS&A a Geo-Logic Company

www.dbstephens.com

Previous Studies and Models

5. MHA (2001). Preliminary Data Collection and Hydrologic Models for the USFilter Tri-Valley Surplus Groundwater Program, Mono County, California



– Relatively simple and coarse model
  - 1,000 ft x 1,000 ft grid cells with 2 layers
– Provides a good starting place for parameter value selection and general model geometry
– No model input files available
– Missing some key appendices

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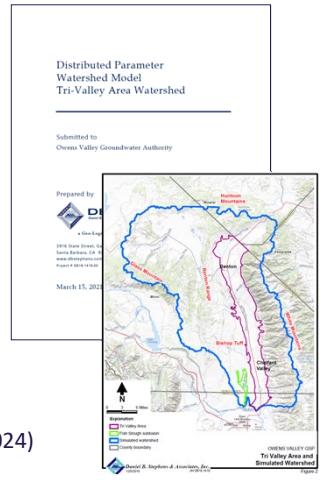
www.dbstephens.com

Previous Studies and Models

7. DBS&A (2021). Distributed Parameter Watershed Model: Tri-Valley Area Watershed



– Advanced rainfall-runoff model
– 25 year simulation period (WY1995 - WY2019)*
  - 852 square mile model domain
  - 550 ft x 550 ft grid cells (78,465 total)
– Provides detailed land-surface water-budgets

* Recently extended to 30 years for this project (WY1995-WY2024)

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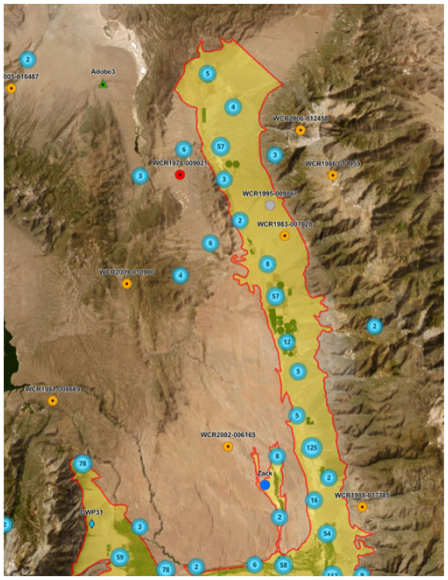
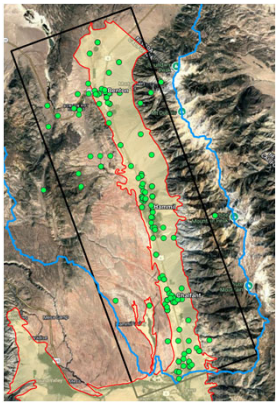
Available Data

- DBS&A maintains a database for SGMA-related data for the OVGA.
- Data can be made publicly visible or only shown to users with login credentials.
- https://owens.gladata.com/

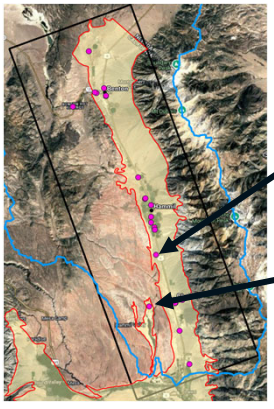


DBS&A a Geo-Logic Company

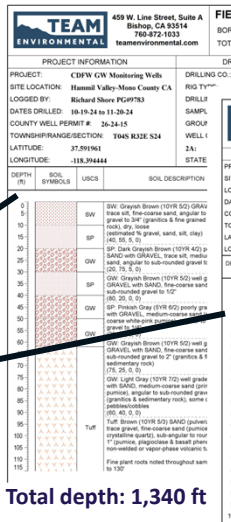
Available Data - Wells



wells with logs



wells with digitized lithology



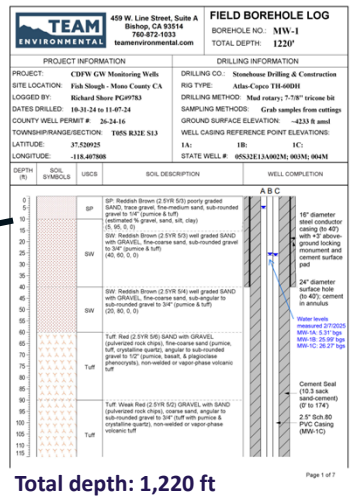
TEAM ENVIRONMENTAL
459 W. Line Street, Suite A
Bishop, CA 93514
760-872-1033
teamenvironmental.com

FIELD BOREHOLE LOG
BOREHOLE NO.: MW-2
TOTAL DEPTH: 1340'

PROJECT INFORMATION
PROJECT: CDFW GW Monitoring Wells
SITE LOCATION: Hammil Valley-Mono County CA
LOGGED BY: Richard Shore PG#9783
DATES DRILLED: 10-19-24 to 11-20-24
COUNTY WELL PERMIT #: 26-24-15
TOWNSHIP/RANGE/SECTION: T04S R32E S24
LATITUDE: 37.591961
LONGITUDE: -118.394444

DRILLING INFORMATION
DRILLING CO.: Stonehouse Drilling & Construction

Total depth: 1,340 ft



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459 W. Line Street, Suite A
Bishop, CA 93514
760-872-1033
teamenvironmental.com

FIELD BOREHOLE LOG
BOREHOLE NO.: MW-1
TOTAL DEPTH: 1220'

PROJECT INFORMATION
PROJECT: CDFW GW Monitoring Wells
SITE LOCATION: Fish Slough - Mono County CA
LOGGED BY: Richard Shore PG#9783
DATES DRILLED: 10-31-24 to 11-07-24
COUNTY WELL PERMIT #: 26-24-16
TOWNSHIP/RANGE/SECTION: T05S R32E S13
LATITUDE: 37.520925
LONGITUDE: -118.407808

DRILLING INFORMATION
DRILLING CO.: Stonehouse Drilling & Construction
RIG TYPE: Atlas-Copco TH-60DH
DRILLING METHOD: Mud rotary; 7-7/8" tricone bit
SAMPLING METHODS: Grab samples from cuttings
GROUND SURFACE ELEVATION: ~4233 ft amsl
WELL CASING REFERENCE POINT ELEVATIONS:
1A: 1B: 1C:
STATE WELL #: 05S32E13A002M; 003M; 004M

Total depth: 1,220 ft

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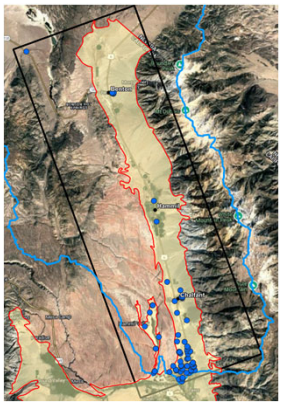
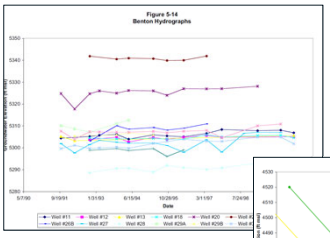
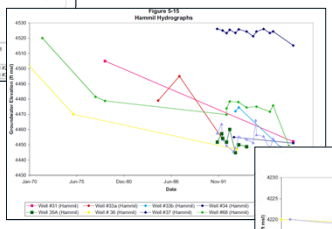
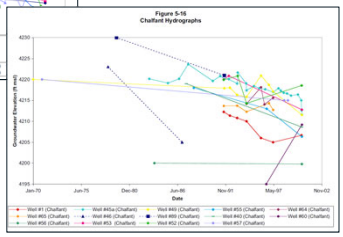
Available Data - Water Levels



wells with water levels







Lots of valuable historical water level data appear to have been lost

"soft" calibration dataset

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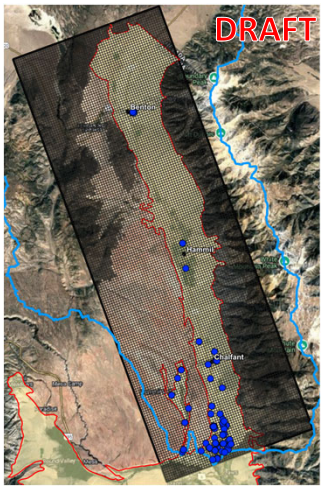
Available Data - Water Levels



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non-LADWP Wells

Well Name	minDate	maxDate	Records
B1	11/1/2011	1/9/2025	30
BT-MW1	10/15/1994	11/13/2023	68
BT-MW2	10/15/1994	10/28/2024	69
BT-MW3	10/15/1995	10/28/2024	66
BT-MW4	11/5/2008	10/28/2024	33
C1	11/1/2011	1/10/2025	30
CH-MW1	10/15/1994	11/13/2023	66
CH-MW2	10/15/1994	11/13/2023	67
CH-MW3	10/15/1994	10/28/2024	70
CH-MW4	11/6/2008	10/28/2024	33
FS-1	2/4/1998	9/27/2023	138
FS-2	2/4/1998	9/27/2023	143
FS-3D	10/10/2019	1/8/2024	602
FS-3S	10/10/2019	1/8/2024	602
FS-4	3/3/1998	12/31/2008	24
Hammil 1	7/7/2007	5/23/2019	7
Hammil 2	3/1/2003	10/2/2024	12
Rpete	10/27/2015	12/20/2016	11
T10000001785 MW-1	8/26/2008	12/8/2015	18
T10000001785 MW-2	8/26/2008	12/8/2015	18
T10000001785 MW-3	10/1/2010	12/8/2015	16
T10000001785 MW-4	10/1/2010	12/8/2015	16
Zack	12/4/1994	9/27/2023	161

LADWP Wells

Well Name	minDate	maxDate	Records
T107	1/13/1998	9/17/2024	335
T276A	11/2/2017	7/18/2024	21
T311B	6/18/1998	9/12/2024	138
T312A	5/22/1999	7/18/2024	32
T313A	10/17/1994	9/17/2024	353
T328A	11/2/2017	7/18/2024	21
T397	10/12/1994	9/17/2024	596
T435	10/17/1994	9/17/2024	315
T493	10/17/1994	2/19/2004	121
T494	7/24/1995	9/17/2024	169
T577	10/17/1994	9/17/2024	358
T578	5/28/1998	9/12/2024	146
T579	4/16/1998	9/12/2024	103
T605	6/4/1999	9/17/2024	134
T606	10/17/1994	9/17/2024	357
T698	5/22/1999	7/18/2024	40
T699	10/30/1997	7/18/2024	53
T701	10/5/1995	7/23/2024	32
T702	10/16/1995	9/17/2024	327
T705	10/17/1994	9/18/2024	332
T734	10/24/1994	7/23/2024	58
T735	10/24/1994	9/17/2024	323
T795	10/17/1994	9/12/2024	625
T835	1/18/2001	9/17/2024	338
T836	5/21/2001	9/17/2024	222
T883	4/15/2005	9/17/2024	277
T978D	1/6/2021	1/8/2024	576
T978S	1/6/2021	1/8/2024	576

Available Data - Water Levels

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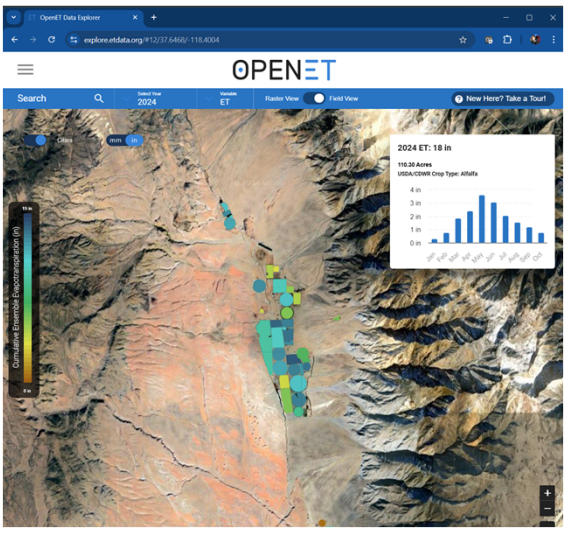
Available Data - ET

- No direct groundwater pumping data except from LADWP wells in Chalfant
- Can estimate groundwater usage using:
  - Agricultural water balance model
  - ET calculated using satellites (more complicated when surface water is used also)



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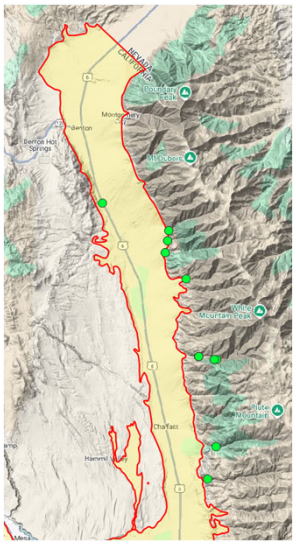
Available Data - Streamflow

- No recent streamflow data available for Tri-Valley
- Reported monthly diversion volumes from WY2022-WY2023 already digitized as part of OVGA GSP Annual Report tasks
- Reported data available back to ~2008



SWRCB Points of Diversion

Available Data - Recharge

- Natural recharge estimated by DPWM model
  - Likely extend DPWM simulation period through WY 2024
- Agricultural recharge and pumping
  - TBD (likely SWBM)

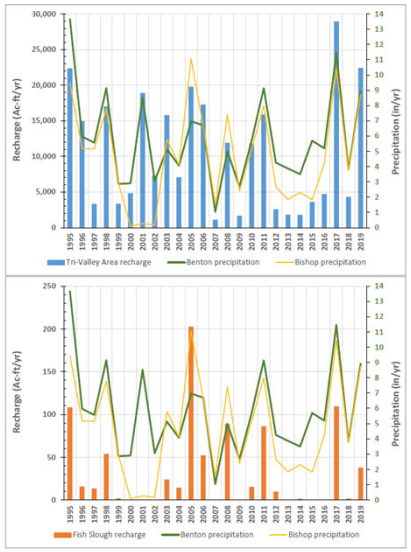
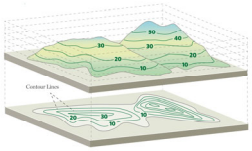


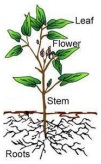
Figure 11. Simulated Infiltration (Recharge) in the Tri-Valley Area (top) and Fish Slough Subbasin (bottom)

Available Data - Surface Characteristics

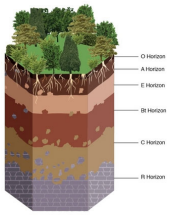


Topography and Drainage Networks

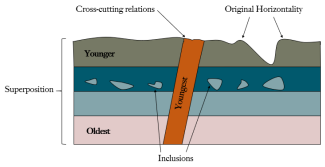
Climate



Landcover



Soils



Geology

Previously compiled for Tri-Valley DPWM

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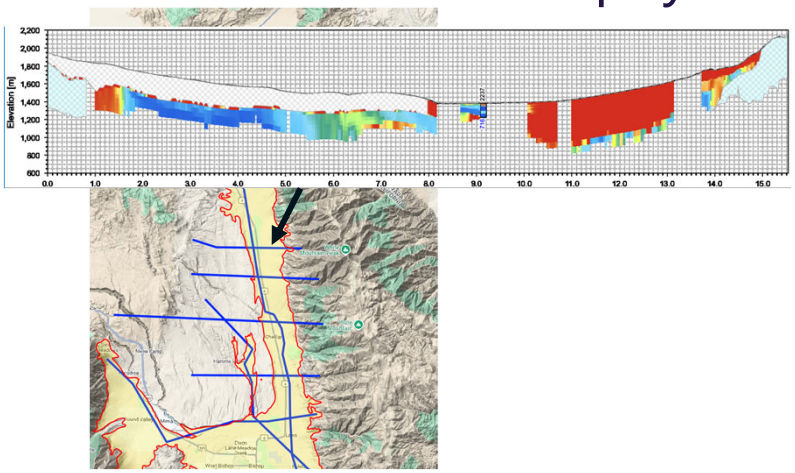
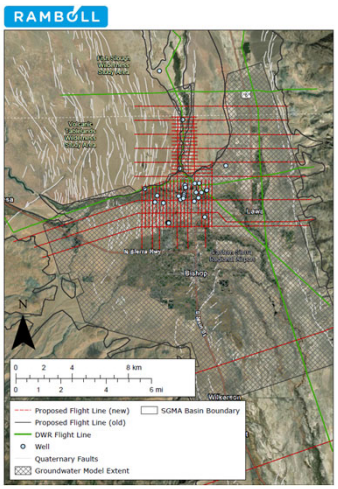
Available Data - Geophysics



DWR AEM Flight Lines



LADWP AEM Flight Lines
(Data not available until March 2025 at earliest)

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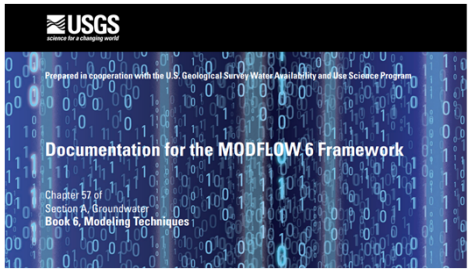
Modeling Approach

- Propose using MODFLOW 6 code
  - Most recent version of MODFLOW
  - Supports unstructured grids



- Model development can be within a graphical user interface (GUI; e.g., Groundwater Vistas) or outside
  - Recommend **not** using a GUI as it limits some functionality

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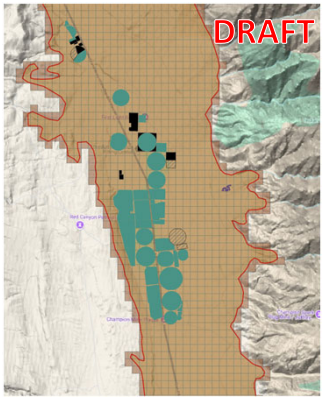
Modeling Approach Summary

- Proposed Simulation Period: WY1995 - WY2024 (30 years)
- Discretization: TBD and variable (~1,000 ft maximum)
- Boundary Conditions:
  - Fish Slough Spring Complex (Drain package)
  - Natural Recharge (DPWM + RCH + SFR)
  - Agricultural Recharge (SWBM + RCH)
  - Mountain Front Recharge (DPWM + calibration)
  - Pumping (Open ET + SWBM)
  - Inflows from Nevada and Adobe Valley (GHB)
  - Constant Head (Owens River)



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Modeling Approach Discussion

Figure 6-5
Hydraulic Conductivity and Aquifer Thickness Zonation

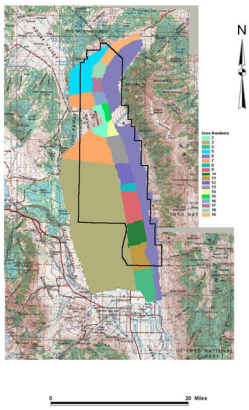
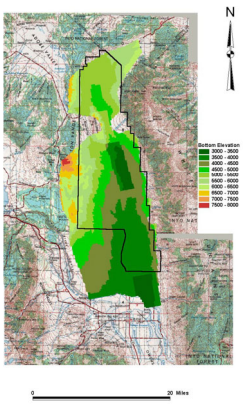
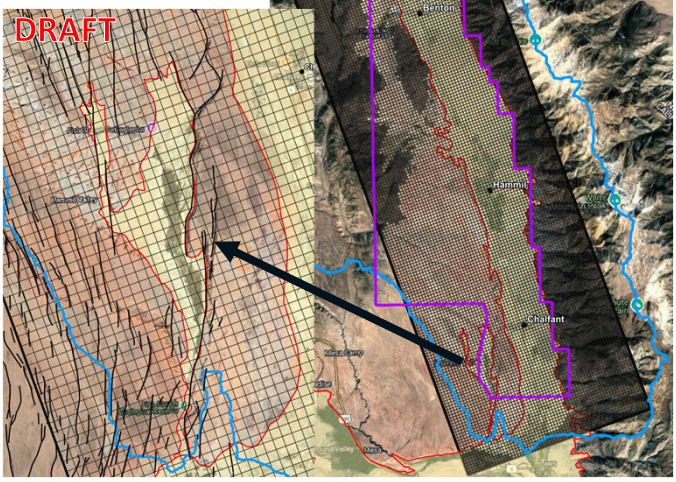


Figure 6-6
Elevation of Aquifer Bottom (ft MSL)





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Additional Slides

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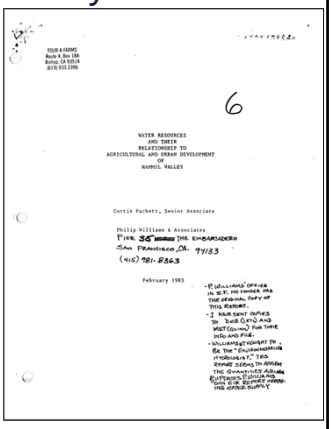
www.dbstephens.com

Previous Studies and Models

2. PWA (1983). Water Resources and Their Relationship to Agricultural and Urban Development of Hammil Valley. *[partially incomplete document]*



6

WATER RESOURCES AND THEIR RELATIONSHIP TO AGRICULTURAL AND URBAN DEVELOPMENT OF HAMMIL VALLEY

Curtis Packett, Senior Associate

Philip Williams & Associates

February 1983

– Only focused on Hammil Valley.
– Indicated increased availability of water resources compared to PWA (1980) report.
– Predicts "serious groundwater overdraft" would occur if irrigated agriculture expands beyond 5,000 acres.

DBS&A a Geo-Logic Company

www.dbstephens.com

Previous Studies and Models

3. Kennedy Jenks Chilton (1987/1988). Evaluation of potential water supply from Mono County, California. *[no copy of original report - found in MHA (2001)]*

– Provides water budgets for Benton and Hammil Valleys.
– Estimated surplus of 4,425 AF from Benton Valley.
– Estimated surplus of 7,760 AF from Hammil Valley.

DBS&A a Geo-Logic Company

www.dbstephens.com

Previous Studies and Models

4. Jackson(1993). Reconnaissance estimate of natural groundwater recharge to the California section of the Tri-Valley Region, Mono County, CA
   [no copy of original report - found in MHA (2001)]

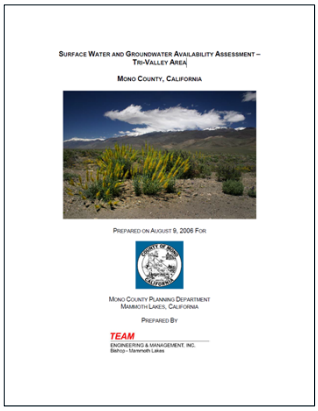
– Estimated recharge using two methods:
  - Maxey-Eakin (1,270 AF/yr)
  - 10% of precipitation (13,140 AF/yr)

DBS&A a Geo-Logic Company

Previous Studies and Models

6. TEAM (2006). Surface Water and Groundwater Availability Assessment: Tri-Valley Area, Mono County, California

– General summary of surface water and groundwater availability
– Provides several recommendations regarding data collection and model updates

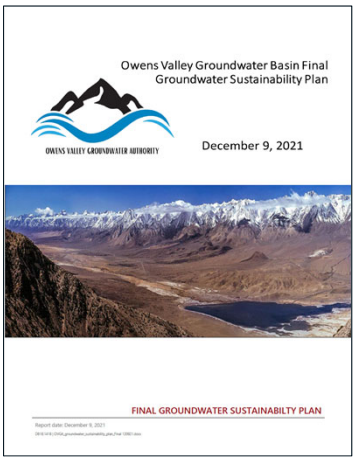


DBS&A a Geo-Logic Company

Previous Studies and Models

8. OVGA (2021). Owens Valley Groundwater Basin Final Groundwater Sustainability Plan

– Synthesis of information from previous studies and databases



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